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WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

NOV 30 1931

Not for publication without
prior consent of this division.

REPORT FOR THE MONTH ENDING NOVEMBER 30, 1931.

HAVRE:

Temperatures for November ranged from 73 degrees on the first to 21 degrees below zero on the twenty-second. The ground was bare of snow until the sixteenth, after which a cover of 3 to 7 inches has persisted. The total precipitation of .39 inch represented a departure of .21 inch below normal, making the total from January 1 to date 8.16 inches or 62.6 per cent of normal.

Beaver Creek, which ordinarily supplies water for winter feeding experiments with cattle at this station, still remains dry, a situation which perhaps can be alleviated only by pronounced chinook winds, none of which have occurred thus far. The soil is still dry and loose under the present snow cover, being in much the same condition as before. Stands of winter wheat are only fair, even on good fallow, and on other tillage methods vary from none at all to very spotted.

JUDITH BASIN:

The weather during November was varied. During the first ten days of the month it was warm with a few days of high winds. A strong wind on November 19 caused considerable soil blowing and drifted Russian thistles against fences and about buildings. Numerous fences were broken down by the drifting weeds. An open shed in the livestock pasture was demolished by the wind storm. The wind storm was followed by a light fall of snow and additional snow fell during the next few days. There were 14 days during the month when some snow fell. At present there are about six inches of snow on the ground. There has been some drifting in unprotected places.

Temperatures dropped during the latter part of the month, zero or lower being recorded on five days of the month.
Maximum temperature, 72; minimum, -8; precipitation, .77 inch.

HUNTLEY:

The comparatively mild weather of October continued until November 14. Following that date the mean temperature curve descended rather rapidly to November 21, when a minimum of -5 and a maximum of 11 degrees was recorded. During the last week of the month the maximum temperatures each day have been about freezing and the minimum readings have ranged from -2 to 16 above zero.

A rain amounting to .26 inch was received November 8. This precipitation took the form of snow on the benchlands surrounding the station; as much as six inches of snow being reported from ranches on the higher benches. A trace of snow was received on the 10th and during the period November 20 to 27 snow fell nearly every day. High winds during the last few days have blown much of this snow off of smoothly cultivated fields and roads and drifted it along fence rows or lodged it on rough plowed land. This condition is more noticeable on the plots than it is on commercial fields.

The first sub-zero drop in temperature found the winter wheat covered with a light blanket of snow and seemingly but little of the wheat was frozen.

No field work was done during the month.
Maximum temperature, 75; minimum, -5; precipitation, .66 inch.

SHERIDAN:

Light rain the first part of the month raised the total rainfall since September 19 to 5.27 inches. This amount of rain has wet the ground only to a depth of 14 to 18 inches on land cropped this year, but the soil is quite wet to that depth. Some snow fell during the last half of the month, but not until after the ground had frozen on the surface. Much of the snow drifted badly, but there was a light covering over the most of the land as the month ended.

Russian thistles were raked and burned during the first part of the month on all land that will be worked early in the spring and on all meadows except 1931 seedings, where the thistles were left to hold the snow. Other work consisted principally in work on sheds and corrals for livestock and in hauling shale on the road leading to the pastures.

Sheridan, continued:

All fall seeded grain, volunteer grain, and grasses made a good growth until freezing weather after the middle of the month. The mean temperature for the first half of the month was considerably above the average for the station; for the last half of the month the mean was below the average, and for the entire month about the average.

Maximum temperature, 74; minimum, - 8; precipitation, rain .38, snow .30, total, .68 inch.

DICKINSON:

The first half of November was mild and open with little precipitation and the temperature somewhat above normal. The last of the month was colder with a minimum temperature of one above zero, recorded on November 28 and 29. The mean temperature of 29.9 degrees for the month was above normal, and also a little warmer than November in 1930. Precipitation amounted to only .38 of an inch. The precipitation for eleven months of 1931 amounted to 15.8 inches or about .70 of an inch above normal for these months. There were about two inches of snow on the ground at the end of the month. The ground has been frozen since November 15.

The mild weather was favorable to livestock. Plenty of roughage is available in the district for wintering the stock being carried over. More than 10,000 sheep have been shipped in, and several hundred head of cattle have come in from the drier country west--most of this stock coming from the district tributary to Miles City where the drought was severe. Feed grain is scarce, and several carloads of oats and corn have come in recently, feeders taking advantage of the emergency rate to save a third of the regular freight rate. Oats shipped in is retailing at 35 cents, and No.1 corn at 65 cents per bushel.

Outside work during the month included husking out an increase field of corn, weighing up late forage crops, hauling lignite, hauling and grinding feed, and other miscellaneous jobs.

Visitors during the month included Max J. Edwards, Bureau of Chemistry and Soils; J. E. Chapman, of the North Dakota Agricultural College; Mr. Lowe, of the Immigration Department of the Northern Pacific Railroad, and Mr. Schoute of Chicago, Editor of a farm paper published in the German language.

Maximum temperature, 78; minimum, 1; precipitation, .38 inch.

MANDAN:

Agronomy

The month of November has been unusually mild. The lowest temperature during the month was 3 degrees above on the 27th. During the 18 years that records have been kept at the station, there have been four other years when the November temperature did not reach zero. The years were 1915, 1922, 1923 and 1928.

The first snow of the season fell on the 9th, when a trace was recorded. The first snow of any amount was about two inches on the 23rd. There is now about 3 or 4 inches of snow on the ground.

The last field work of the season was done on the 9th, when all fallow plots were duckfooted.

All seed grain has been cleaned and stored for the winter.

According to data from the Weather Bureau at Bismarck, the drought in northwestern North Dakota was the most severe on record. Much of the area received only about half the normal amount of precipitation.

The total precipitation for November was .47 of an inch. The 55-year average is .58 of an inch. The total precipitation for the 11 months is 16.70 inches. The 55-year average is 16.32 inches.

The following data are for the month of November: Maximum temperature, 71 on the 7th; minimum 3 on the 27th; maximum wind velocity, 14.6 miles per hour on the 20th; minimum velocity 2.3 miles per hour on the 9th and 22nd. Precipitation, .47 inch. Snowfall about 7 inches.

Arboriculture

All nursery tree stock which will be shipped to shelter-belt cooperators next spring, has been fumigated and heeled-in. Mr. J. A. Munro, State Entomologist, and Collaborator, Federal Horticultural Board, had charge of the fumigation which was begun November 3 and was completed November 7.

Mandan, continued:

Arboriculture, continued:

The nursery fields have been cleaned of discarded trees and have been plowed. Red cedar and Russian olive seed has been picked and stratified. A quantity of ash seed of the 1930 crop has also been stratified. The 1931 crop of both boxelder and green ash seed was a total failure. A sufficient quantity of both species fortunately remains over from the 1930 crop, to take care of next spring's requirements.

One hundred thousand 9-inch Northwest poplar cuttings have been made and buried. These were made from tops of poplar nursery stock and from the cutting block kept for that purpose.

A number of Chinese elm trees planted last spring have been painted with sulphonated oil to prevent rabbit injury. This repellant has recently been highly recommended by Professor R. B. Harvey of the University of Minnesota, who has been carrying on extensive tests with different repellants.

Horticulture

Jackrabbits and cottontails are moderately numerous this fall, and have already done some damage to young trees in the orchards and nurseries. They seem to prefer the bark of apples to that of other fruits. Most of the smaller trees in the experimental blocks have been wrapped with burlap. A mixture made by adding flowers of sulphur to boiling hot linseed oil has been used to paint the trunks and lower branches of some of the trees, in the hope that this would act as a repellant to rabbits. A number of these pests have also been shot.

Tubbed trees and bees have been stored in the rootcellar for the winter; manure in the pit has been forked over, and straw mulch applied to young trees and strawberries.

The field plots in the various vegetable projects were manured and plowed the first week in the month. Owing to the excellent moisture content in the soil at the time of plowing, an unusually good job of plowing was done.

Mandan, continued:

Horticulture, continued.

Mulching of newly planted beds and borders on the grounds, nursery rows of ornamentals and semi-hardy shrubs and roses in the arboretum, was carried on the second week in the month.

The long, mild fall, with consequent ripening of buds and wood of trees and shrubs, with an adequate amount of moisture at the roots, should bring these through the winter in unusually good condition.

Considerable work on preparing and sorting of 1931 selections of tomatoes, musk and watermelons and sweetcorn, has been carried on during the last two weeks in the greenhouse.

Among those visiting the station were J. A. Munro, State Entomologist, Fargo, North Dakota, F. C. Campbell, Supervisor of Extension, U. S. Indian Service, and L. C. Lippert, Agricultural Extension Agent.

BELLE FOURCHE:

The first half of November was unusually mild and very little wind movement occurred, but from November 20 to November 30 the weather has been quite cold and high winds have prevailed most of the time. The mean temperature for the month was 32 degrees, which is 1 degree below normal for November.

Several light snow storms occurred, some of which assumed blizzard-like proportions for a short time, but in no instance was enough snow received to be of any material benefit to crops. Only a comparatively small amount of snow has melted, but high winds have caused the snow to drift badly so that clean cultivated fields are practically bare, and not much snow remains on fall-plowed fields.

There has been no improvement in the moisture content of the soil. Soil samples taken November 13 show slightly less moisture in the various plots than in July after harvesting of small grain was completed.

Belle Fourche, continued:

Fall grain has not emerged, but the young plants from most of the seed which germinated after the rain in October appear to be alive and in good condition.

Maximum temperature, 75; minimum, 1; precipitation, .31 inch.

ARDMORE:

The first twenty days of November were unusually warm and pleasant. November 20 the first storm of the winter commenced. The temperature had fallen to five degrees above zero by 8 o'clock on the morning of November 21, and since that time the weather has remained continuously cold. About five inches of snow fell on November 21 and 23. This snow drifted badly and is now nearly all collected in drifts.

Yearling steers for the winter feeding tests were received from the Valentine, Nebraska, substation the early part of November. These steers have been branded, and have been sprayed once to control lice.

The steers being fattened on barley completed their second period in November. During this period the average daily gain per steer was a little more than two pounds per head.

Maximum temperature, 76; minimum, -4; precipitation, .31 inch;
Precipitation for the year to date, 8.91 inches.

ARCHER:

The first week of the month was warm and pleasant. This was followed by a cool spell after which the weather was pleasant until November 19, when it turned cold and windy. On November 21, 22 and 23 there were wind and snow and the weather remained quite cold until the last of the month. The total precipitation for the month was .15 of an inch. Some soil blowing occurred during the month.

Up to and including November 7 the work consisted of putting away the corn, which had been placed in the open to dry. Since that date the work has consisted of hauling the winter supply of hay, constructing a watering tank for the dairy herd, changing the dairy yards and corrals, also litter carrier tracks, and beginning the construction of an addition to the dairy shed.

Archer, continued:

The winter wheat had made good growth but the rabbits had begun to graze it severely. The snow of November 21, 22 and 23 was very opportune in that it drifted into the furrows made with furrow drill, thereby protecting the grain from the rabbits. The drifted snow will prove beneficial to the small evergreens in that the rows of Sudan grass on either side of these trees caused the snow to drift on them and thus protect them from soil blowing and winter drought.

Maximum temperature, 73; minimum, -6; precipitation, .15 inch.

AKRON:

November brought the first consequential snow and the first winter temperatures. The snow fell the 23rd and amounted to about 4 to 6 inches nicely distributed over the ground and fortunately allowed to remain until by the month end it was practically all melted. The snow gauge actually caught .11 inch of precipitation, indicating a full inch of snow, but it is inconceivable that much fell; rather the snow gauge must have caught an unfair portion due to drifting through the instrument shelter fence. The first portion of this snow consisted of large heavy flakes. Minimum temperatures ranged close to freezing up to the snow fall, after which the minimum ranged slightly above zero.

Fall-seeded crops went into the winter in most cases not emerged. This places the winter wheat crop in a precarious position, especially with respect to soil from spring soil blowing. However, should heavy wet snows come in place of the spring winds a fair crop may be harvested, provided rust does not take its toll from the late-maturing plants. In other words the winter wheat went into the winter in an unsprouted condition and an emerged stand is yet entirely possible.

The winter feeding work is nicely under way. The fall was especially favorable for starting this work.

The year's rainfall at this station totals less than 10 inches.

Maximum temperature, 75; minimum, 2; precipitation, .11 inch, as snow.

NORTH PLATTE:

The first two-thirds of the month were dry, mostly clear, and temperatures moderate. About six inches of snow occurred in several storms between the 21st and the 26th. About half of this remains at the end of the month. Temperatures since the snow have been lower, with a minimum of 5 degrees recorded on the 25th. The snow drifted only moderately. The .59 inch of precipitation which it contained might have furnished sufficient moisture to penetrate to the depth of winter wheat seeding if thawing had taken place more rapidly. With the very slow thawing which has occurred, most of the moisture has been lost by evaporation.

Should normal precipitation be received for December the 1931 deficit at this station will be 6.75 inches or 37 per-cent.

COLBY:

The first half of November was dry and pleasant, except for a few windy days. A hard wind caused some soil blowing in this vicinity on the 16th. Since the 19th precipitation has been recorded on all but four days. Most of this has come in the form of snow. There have been no heavy snows, but light snows have been frequent and the snow has covered the ground since the 19th. There has been some drifting, but on the whole the snow covers the ground fairly evenly. During the last half of the month the temperatures have been much lower than during the first half, but the lowest temperature has not gone below 5 above zero, and on only three days has it remained below freezing for the entire 24-hour period.

Except on summer fallow the winter wheat has been in a precarious condition. In fact much of it appeared to be beyond recovery before the snow fell. Much of it was curling underneath the surface; some of it, with short sprouts, seemed to be at the end of its rope; and some of it was still in the dry ground the same as the day it was planted. I do not know of anything that we could have this time of year which would be better for the wheat than the snow we have now. The ground under the snow is not frozen, and the moisture appears to be soaking into the soil as the snow melts.

Colby, continued:

The late fall plowing and listing on the project was done on November 2. The corn, milo, kafir, and sorghum ground was dry and hard, big clods being turned up. The winter wheat stubble ground, the stubble being heavy and the ground free from weeds, turned up mellow and moist. The subsoiling of the MC E plots of corn and milo was done at the same time. The plowing and subsoiling were done in one operation this year. Using the new gang two-way plow behind the tractor, we hooked the subsoiler behind the second bottom of the plow in the ground. At the end we unhooked the subsoiler to permit the plow to turn over and then hooked it on the second bottom of the gang in the ground. Thus the subsoiler was run in every second furrow as heretofore.

The top dressing of the winter wheat plots with straw and manure was done on November 9. After the straw was applied it was packed into the surface soil, with a disk run straight, to keep it from blowing away. It is still on in good shape, although there have been some windy days since.

Maximum temperature, 82; minimum, 5; precipitation, 1.06 inches; snowfall, 13.25 inches.

GARDEN CITY:

Due to the unusually dry fall, wheat seeding was done almost three weeks later this year than formerly. Seed beds for wheat following wheat had practically no subsoil moisture. Much of the wheat was seeded in dry soil. Immediately after seeding, .55 inch of rain fell, which was more of a detriment than good. The ground crusted over and much of the wheat could not come through. Some plots do not have over a 25 per cent stand. Farmers complain of very poor stands on many of their fields. Some wheat is showing pronounced lack of moisture. Undoubtedly there will be a heavy loss from shortage of moisture and winter killing. Soil blowing will very likely become a serious trouble in the late winter months.

The sorghums on the dry land station were threshed about the fifteenth of the month. As a general rule yields were exceptionally heavy and the grain was of good quality. Many local fields of Beaver milo, the new combine-type sorghum have yielded sixty to seventy bushels. Some trouble has been experienced from lodging in places, due to the dry, hot weather of September accompanied by high winds.

Garden City, continued:

All fall listing has been done in the rotation and seed-bed blocks. Plowing was started but snow and rain stopped field work after the 18th.

Working up annual reports and doing office work has occupied the time since field activities stopped.

Weather conditions during the last half of November have been anything but pleasant. Most of the time we have had cloudy weather, below freezing with considerable fine mist, sleet and snow falling. Five nights the minimum temperatures ranged from 16 above down to 12 above zero. Maximum temperature for the month was 80 degrees on November 3. Precipitation has been in the form of light showers and some very fine snow.

November 29, .17 inches of moisture were recorded from snowfall. Weather continues cold with very little thawing during the day. Maximum temperature, 80; minimum, 12; precipitation, .59 inch.

HAYS:

The month of November broke a 64-year precipitation record, the total for November, 1931 being 3.76 inches or .21 inch above the previous high record made in 1909. The normal precipitation for November is .80 inch.

The precipitation during the late summer and early fall was considerably below normal for that period which resulted generally in a comparatively dry seed bed for wheat at seeding time. Although on early tilled soil there was some available moisture in the lower part of the surface foot and considerable moisture in the second foot of soil, the subsoil below two feet was dry and it was also dry at seeding depth. On account of the dry surface soil a large percentage of the acreage in this section, prepared for wheat, was not sown until much later than usual. On many of the fields seeded early in the fall in dry soil the wheat was destroyed by false wire worms and was later reseeded.

Hays, continued:

Rains October 11, 12, and 13 provided enough moisture in the surface soil to germinate the wheat and to carry it along until the November rains began this fall on the 11th. Since that date there has been an abundance of moisture in the form of rain and snow for present and immediate future requirements of the wheat, which generally in this section is up to a good stand but has made only a scanty growth. There is no wheat in this vicinity having sufficient growth for pasture; 60 miles west and southwest of this station there was not enough rain in October to even germinate the wheat.

The temperatures during the first half of the month ranged between 21 and 87 degrees and during the last half of the month it ranged between 11 and 66 degrees. The average maximum temperature for the month was 54.6 and the average minimum 30.8. The maximum was three degrees below normal and the minimum one and one-half degrees above normal.

Work on the project during the month consisted largely in hauling off the remainder of stover crops, applying manure to fertilizer plots, finishing up field work, cleaning cisterns, draining evaporation tank, putting away for the winter months the meteorological instruments and farm machinery not already housed, general cleaning up of soil cans, plot stakes, and sign boards.

TUCUMCARI:

Fall work in this locality is well completed, with an abundance of sorghum grain and roughage harvested. Prices of grain are very low, so a considerable number of farmers will feed cattle under one contract or another. In some cases farmers are receiving a flat rate of 5¢ per pound for all gains made during the feeding period, while in others they are to receive market price for the gain, taking their chances with the owner when cattle are shipped to market. Heads and threshed grain are extremely low in price, while there is practically no sale for bundle feed, so it seems that farmers who feed their own or other cattle have very little to lose and may receive a fair return for their crops.

Tucumcari, continued:

Precipitation for the year to the close of this month totaled 17.85 inches compared with a 26-year average of 16.35 inches for this eleven-month period. The season was lower than usual in evaporation and wind movement. Temperatures March to May inclusive were unusually low, while September was very warm. The first frost was received at the close of October and no November frost occurred until the 20th. November was extremely warm during the first three weeks, with the last ten days unusually cold. Extremes for the month were 80 and 13 degrees.

A light picking of cotton remains to be made, for late bolls did not crack open until the cold weather toward the close of this month. Recently it has been too cold to pick, 49 degrees being the highest recorded the past ten days. Aside from cotton picking and hauling and stacking some fifteen acres of increase sorghum, the fall work is completed.

Crop prospects were unusually favorable up to early August. A dry period from August 10 to September 29, combined with very warm weather, reduced the yield of all sorghums materially. In spite of this, all dry-land milo plots averaged 37.5 bushels and all kafir plots 25.6 bushels to the acre. Sixteen out of twenty-two grain sorghum variety plots planted May 29 produced over 2,000 pounds threshed grain to the acre. Only two plots in a similar test planted June 15 produced over 2,000 pounds per acre, but only two plots on this date failed to produce at least 1,500 pounds threshed grain per acre. Crops as a rule were better than in any year since 1926, when precipitation was very high.

Dry-land high and low yielding plots:

	Highest	
	Yield	Plot
Milo	65.3 bu.	298B, on manure fallow
Kafir	33.7	MCB, continuous, fall plowed
Sorgo	2300 lbs. grain	MCD; on fallow
	12890 lbs. total.	
Corn	26.7	MCB, continuous, fall plowed
Cowpeas	3700 lbs. hay,	S301A: on T.D. milo land.

Tucumcari, continued:

	Lowest Yield	Plot
Milo	20.5 bu.	169A; 3 yr. rot., on kafir.
Kafir	12.0	MCF. continuous, listed.
Sorgo	930 lbs. grain	MCF. " "
	7300 lbs. total	
Corn	16.0	MCF, continuous, listed.
Cowpeas	2030 lbs. hay	S160B; 3 yr. rot., on kafir.

DALHART:

The weather remained favorable for field work the first half of the month while the latter part was characterized by low temperatures and snow flurries. The total precipitation for the month totaled only .36 of an inch.

Winter wheat on the station is going to go into the winter in good condition. There is very little top growth. Winter rye is likewise showing excellent stands on all preparations and very small plants. The rains were very light and spotted this fall. Most of the wheat farmers delayed seeding because of the dry fall and a rather large per cent of wheat is still being seeded.

Yields of all crops on the station were above average for the year. Threshing of all plots was completed before the blustery winter weather. There still remains about two days of increase field threshing; this work is possible and is being done to-day for the first time in two weeks. All corn plots have been harvested and weighed. Peanuts and cotton gave yields much above the average. The milo rotation plots averaged 30.4 bushels to the acre in comparison with 35.7 last year and with a 23-year average of 25.7. The kafir rotation and tillage plots yielded an average of 31.4 bushels to the acre in comparison with 30.2 last year and with a 23-year average of 21.9.

Wheatland milo appears to be selling itself to the farmers this year. Several requests for seed for next year's plantings have been received. Reports from the small lots of seed distributed last spring, have all been favorable. Wheatland milo gave very good yields on the station this year in comparison with standard varieties of grain sorghums on cropped land. This variety appears to be very susceptible to the milo disease. In our lodging test again this year it appears

Dalhart, continued:

to be among the best to resist lodging. This has been the feature which the farmers especially like, as with the premature drying experienced this fall the ordinary Dwarf Yellow milo in many fields was a tangled mass of stalks flat on the ground. Wheatland is still standing better than 95 per cent.

Maximum temperature, 78; mean maximum, 56; minimum, 12; mean minimum, 27; the mean temperature for the month 42; precipitation, .36 inch; six snow flurries without a ground covering of snow at any time; wind velocity 5.0 miles per hour; precipitation for the year to the end of November, 13.99 inches.

BIG SPRING:

Weather conditions during the month of November have been unusually warm and wet for this time of the year. Although the average frost date for this station is November 2, a killing frost has not yet been received. On the night of November 27 the minimum recorded was 31, but the most tender vegetation was not killed at this time. 1.96 inches of rain have been received during the month as compared with a normal of 1.02 inches. This moisture was received during five different showers which made sorghum threshing very slow work.

With the exception of painting, the new cattle feeding shed and feed storage barn were completed on November 17. Sixty head of feeder calves were put into the feed lots at the new plant on November 20. These calves were divided up into four lots of 15 head each, and are now being feed the following rations:

Lot 1. Ground threshed milo	Lot 2. whole threshed milo	Lot 3. whole milo heads	Lot 4. ground milo heads.
cotton- seed meal	cotton- seed meal	cotton- seed meal	cotton- seed meal
sumac fodder	sumac fodder	sumac fodder	sumac fodder

Station threshing has been attempted throughout the month whenever weather conditions would permit. Other work has consisted of harvesting late maturing sumac, heading milo and digging peanuts.

Maximum temperature, 80; minimum, 31; precipitation, 1.96 inches.

LAWTON:

November weather conditions were very favorable for farm work up to the 16th, when precipitation records were augmented by 3.38 inches of rain that thoroughly soaked the soil, caused considerable erosion, and supplied liberal amounts of water for livestock. Precipitation recorded on 10 days during the month brought the monthly total to 6.24 inches, and field work of any kind was practically impossible the latter half of the month.

Weather records show that a monthly rainfall of 6.24 inches in November has been equaled or exceeded only in 1899, 1902 and 1909.

The first and second frosts of the season were recorded October 31 and November 1 with minimum temperatures of 32 degrees. On the upland both frosts were light and but little injury to vegetation was noticeable. On creek bottom fields both frosts were heavy, and vegetative growth of truck crops was killed. The next heavy frost was recorded November 26 with a minimum temperature of 29, and resultant damage to vegetation was slow and comparatively light.

The period, November 12 to 30, was cloudy and threatening skies permitted but very little sunshine.

Field work that involved plowing, disking, seeding, and cotton picking was completed before the rains started, and erosion on some of the freshly plowed and disked land will require additional work later in the season.

Small grains that were seeded early in dry seed beds emerged and grew rapidly when the first moisture was received, beginning October 11. Subsequent temperatures for the month and the first half of November produced a rank, vigorous growth that resulted in liberal supplies of grazing. Although the small grain experimental seedings were seriously delayed by dry weather, the crops emerged normally and were satisfactorily established for the winter period.

Ornamental shrubs, and practically all of the deciduous trees, except American Elm, retained most of their foliage December 1. Temperature and moisture conditions have apparently been highly favorable to a brilliant coloring of forest foliage on the sides of the Wichita Mountains this fall, and they present many very striking scenes. Colorful and abundant blooms of roses and chrysanthemums were available throughout November.

WOODWARD:

There has been some precipitation on 15 of the 22 days since the 10th of November, with a total precipitation for the month of 5.73 inches. Due to the unusual amount of rainfall and the continued warm weather wheat has made a very heavy growth. Wheat pasture is proving a great asset to farmers who had little feed for stock due to the dry summer.

There has not been a day in the past three weeks when threshing of sorghums could be done and very little either on the station or on farms had been done before wet weather started.

Many Chinese elm trees, were killed last spring by a late, violent freeze. November 22 and 23 a sleet storm coated tree branches with an inch or two of ice. The leaves of the Chinese elm were also carrying their burden as these had not yet fallen as those of other trees had. The limbs could not support the load and snapped square off by the hundreds, with rifle like reports. Still, perhaps, the Chinese elm is our best tree. Finding a tree for this section is no easy matter.

PENDLETON:

The first week of November was the only one during the month in which field work could be done, the weather during the remainder of the month being unfavorable. The rotation and tillage plots were harrowed twice before seeding in an effort to destroy as many tar weeds as possible. The normal seeding time in this section starts about the 15th of October; seeding was delayed this year until the early part of November on account of drought. Two acres of fertilizer trials with winter wheat remain to be seeded; rains and cold weather have prevented seeding of these. The majority of the farmers in this section were unable to finish their fall seeding.

Snow began falling on November 24 and continued until Thanksgiving Day; total snow amounted to only about four inches. Minimum temperatures during the last ten days of the month have ranged from one above to eight degrees above with no temperatures above freezing during the day.

Pendleton, continued:

The writer attended the meetings of the Eastern Oregon Wheat League in The Dalles on November 13 and 14.

A three-car garage has been added to the south end of the implement shed. The office laboratory building will be completed about December 10.

Maximum temperature, 66; minimum, 1; precipitation, 2.61 inches.

NOTE:

A supply of ten copies each of Miscellaneous Circular No. 81, Supplement 1, "The Relation between Crop Yields and Precipitation in the Great Plains Area," is being requested to be sent to each of the field stations of this division. Should any additional copies be desired by any of the stations, kindly forward request to the Washington office.

NOTE:

"BIDS FOR A PARTICULAR MAKE OF ARTICLE, 'OR EQUAL'.

"It is a fundamental requirement of Federal purchasing that advertisements for proposals must be so drawn as to allow full and free competition and acceptance of the lowest responsible bid which meets the advertised specifications. The division of Purchase, Sales and Traffic has noted a growing tendency on the part of bureau officers, in their drafting of specifications for use in obtaining quotations on purchase requirements, to particularize some make of article with the addition of the words 'or equal'. This is an improper procedure. The Comptroller General recently commented adversely on the employment of this type of specification, stating, in effect, that its use was justified only in those exceptional cases where the need was 'not otherwise possible of clear expression in description'. In his decision it was further stated

Note, continued:(Bids for a particular make of article, or equal.)

that even in such cases the specification should indicate that the particular make was cited merely as illustrative of the article required, and that bidding was not limited to such make. The use of the 'or equal' form of specification in advertising for commonplace articles was specifically prohibited.

--- A. McC. Ashley,
Chief, Division of Purchase, Sales
and Traffic."